

Name: _____ Period: _____ Date: _____

Algebra Functions Quiz REVIEW

1. Circle all values of x that would make the table not a function.

| | |
|----|----|
| x | y |
| -3 | 5 |
| -1 | 12 |
| 0 | 6 |
| x | 3 |

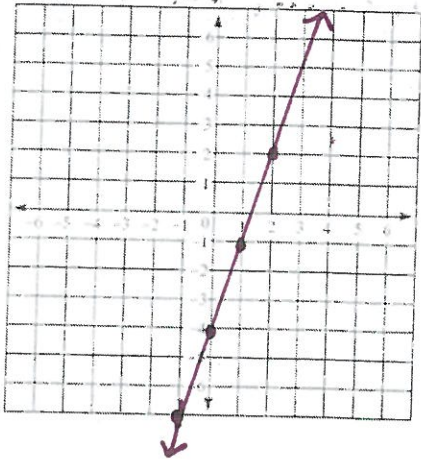
-3 -2 -1 0 1 2 3

2. Graph each function using a table.

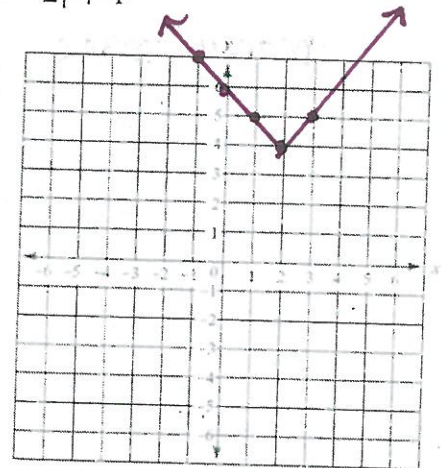
$f(x) = 3x - 4$

$g(x) = |x - 2| + 4$

| | |
|----|------|
| x | f(x) |
| -2 | -10 |
| -1 | -7 |
| 0 | -4 |
| 1 | -1 |
| 2 | 2 |



| | |
|----|------|
| x | g(x) |
| -2 | 8 |
| -1 | 7 |
| 0 | 6 |
| 1 | 5 |
| 2 | 4 |
| 3 | 5 |



3. Evaluate the following using the functions below:

$f(x) = 2x^2 - 4$

$g(x) = 5x - 1$

$h(x) = |-3x + 8|$

$f(3) = 14$

$h(-2) = 14$

$g(8) = 39$

$f(3) = 2(3)^2 - 4$

$h(-2) = |-3(-2) + 8|$
 $16 + 8|$

$g(8) = 5(8) - 1$
 $= 40 - 1$

$= 2 \cdot 9 - 4$
 $= 18 - 4$

$h(-4) + g(2) = 29$

$-2 \cdot f(1) = 4$

$f(h(2)) = 4$

$h(-4) = |-3 \cdot -4 + 8|$

$f(1) = 2(1)^2 - 4$

$h(2) = |-3(2) + 8|$

$|12 + 8|$

$2 \cdot 1 - 4$

$= |-6 + 8|$

20

$2 - 4$

$= |2|$

$20 + 9$

$= 2$

$f(2) = 2 \cdot 2^2 - 4$

$g(2) = 5(2) - 1$
 $= 10 - 1$
 9

$-2 \cdot -2$

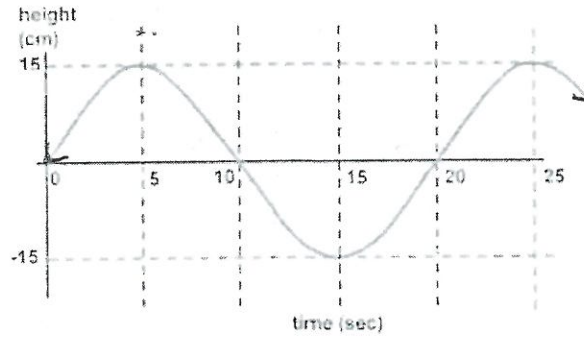
$2 \cdot 4 - 4$

4.

Domain: \mathbb{R}

Range: $-15 \leq y \leq 15$

Discrete / Continuous (circle one)



5. Girl Scouts sell cookies for a fundraiser for \$7 each. They have 320 boxes to sell. The amount of money they make is based on the number of boxes they sell.

Independent: # of boxes of cookies Domain: $\{0, 1, 2, \dots, 320\}$

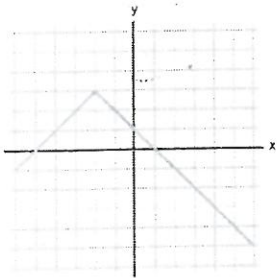
Dependent: money made Range: $\{0, 7, 14, \dots, 2240\}$

6. Determine whether each function is linear or non-linear. (Circle your answer)

a. $r(s) = 3s + 2$ linear / non-linear

b. $f(x) = 4x^2 + 2$ linear / non-linear

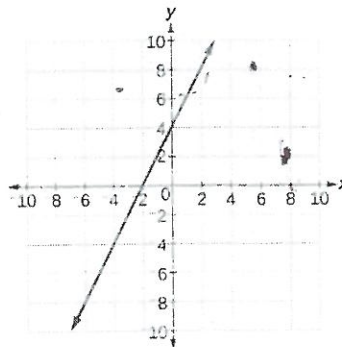
c.



linear

non-linear

d.



linear

non-linear

e.

| Input | Output |
|-------|--------|
| 1 | 2 |
| 2 | 4 |
| 3 | 6 |
| 4 | 8 |
| 5 | 10 |
| 6 | 12 |

linear

non-linear

f.

| x | y |
|---|----|
| 0 | 3 |
| 2 | 11 |
| 4 | 19 |
| 6 | 27 |
| 8 | 35 |

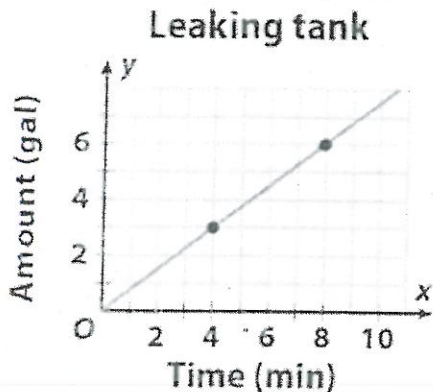
linear

non-linear

The amount in the bank account after a certain number of weeks (w) is represented by the function, $B(w)$. What would $B(9) = 62$ mean in the context of this problem?

After 9 weeks there is 62 dollars in your bank account

8. Find the rate of change of the graph below and explain what it means in the context of the graph.

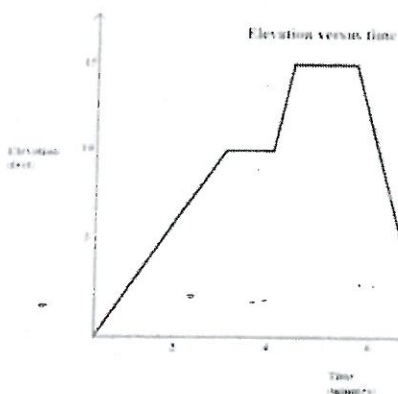


| X | Y |
|---|---|
| 4 | 3 |
| 8 | 6 |

+4 ↓ ↓ +3

$$\frac{\Delta Y}{\Delta X} = \frac{3}{4} = 0.75 \frac{\text{gal}}{\text{min}}$$

9. Write a story to match the graph below.

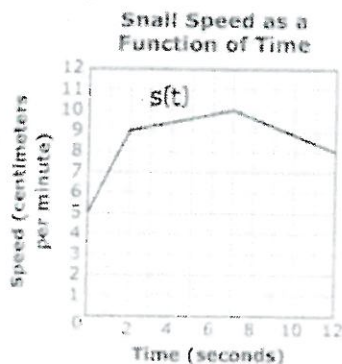


Possible answer:

Jason is climbing a mountain, he is jogging ~~walking~~ up and then gets tired and takes a break. He then runs to the top. When he gets to the top he stops and enjoys the view. He then runs almost to the bottom, he twists his ankle and has to slowly walk the rest of the way.

10. Use the graph below

Evaluating a Function From a Graph



a. $s(7) = 10$

b. $s(1) = 7$

Explain what each of these means in the context of the problem.

* a. After 7 seconds the snail is going 10 cm per minute

b. After 1 second the snail is going 7 cm per minute

Faint header text at the top of the page, possibly a title or address.

Two distinct blocks of faint text, possibly representing separate sections or paragraphs.

A large block of very faint, illegible text in the middle section of the page.

Faint text at the bottom of the page, possibly a footer or concluding remarks.